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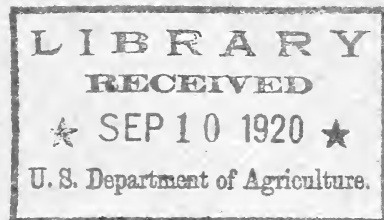
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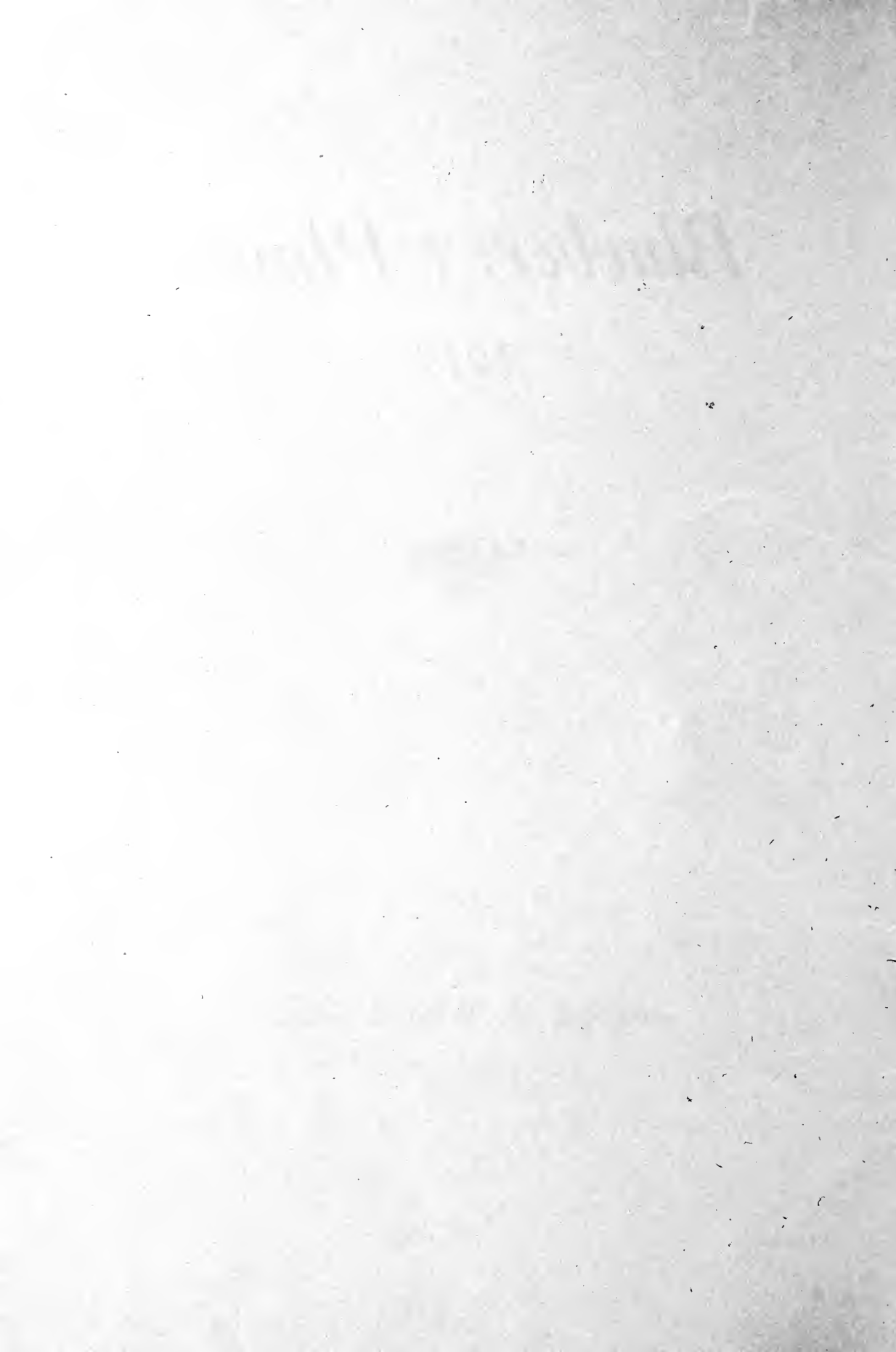


Blueberry Plants



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Blueberry Plants

1919



Joseph J. White, Inc.

New Lisbon, N. J.



A CLUSTER OF HARDING BLUEBERRIES, NATURAL SIZE

The large berries only were ripe. As blueberries ripen
they rapidly increase in size

BLUEBERRY PLANTS



INTRODUCTION

THE wild blueberries or swamp huckleberries which grow so abundantly in the northern and eastern parts of the United States and in Canada are a universal favorite with those who, as boys and girls, have had the privilege of gathering them. Because of the favor, the real affection, with which blueberries are regarded, many attempts have been made to bring special plants into the home garden. These bushes have in nearly every case been killed with kindness. They have been given the manure, the lime and fertilizers which gardeners found effective in the rose garden and the clover field.

It was not till after the publication of "Experiments in Blueberry Culture," by Mr. Frederick V. Coville, of the U. S. Department of Agriculture, about the close of 1910, that we could know that what was meat for the rose was poison to the blueberry.

Since the beginning of 1911 Joseph J. White, Inc., with its treasurer, Miss Elizabeth C. White, as the active worker, has co-operated with the Department of Agriculture, as represented by Mr. Coville, in its experiments in blueberry culture.

Choice wild bushes have been located, a study made of methods of propagation on a large scale and a foundation laid for the commercial production of blueberries.

It has been learned that practically every wild blueberry bush has a special combination of characteristics which make it an individual distinct from every other

wild blueberry bush. The varying characteristics include size, color, flavor, texture and shape of the fruit. Variation in the form of the flowers makes it easy or difficult for cross pollination to be effected by the bees. Habit of stem growth, habit of root growth and the balance between the two vary greatly. The form, color and texture of the leaves and the character and distribution of the pubescence thereon vary infinitely.

In the breeding work, conducted by the Department of Agriculture, all these characteristics are found inheritable in infinite variety of degree and combination. This makes for wonderful possibilities of improvement in our best loved native fruit. As yet the possibilities for improvement have only been glimpsed; it will take a lifetime, or more probably generations, to exhaust them.

This little book is printed in the hope of furnishing a source of inspiration and information for those who desire to assist in the development of cultivated blueberries rather than as a price list of proven plants.

HYBRID BLUEBERRY PLANTS

The principal blueberry trial grounds of the U. S. Department of Agriculture are located at Whitesbog, under our care. Here are being tried thousands of plants raised from seed obtained by crossing the best of the wild blueberry stocks. Of the hybrid plants that have already fruited, about one in a thousand is producing berries very much larger than either parent. Our contract with the Government authorizes us to use a portion of the propagating material from all desirable hybrid plants, and we are pushing ahead with the propagation of these hybrids as fast as circumstances permit, but the spring of 1921 will be the earliest possible date at which any of the hybrid plants can be offered for sale.

The best of the hybrids yet fruited produce berries

no larger than Rubel, Harding and some wild stocks found later than these; but they are so much better than the stocks from which they came, the best known at the time these crosses were made, that we confidently expect remarkable results when crosses between the best wild stocks now known are brought into fruit. It seems entirely possible that within ten years a blueberry an inch in diameter may be an accomplished fact.

SELECTED WILD PLANTS

It is only eight years since we began searching for superior wild blueberry bushes; there has been a great loss of valuable material incident to working out methods of propagation, and it takes from three to five years after the selection of a wild blueberry bush before the plants propagated from it produce sufficient fruit for a test. Owing to these facts, our stock of tested wild blueberry plants is very small.

The majority of the stocks now being tried out were found in 1914. Prior to that time thirty-six blueberry plants were selected and moved to the plantation at Whitesbog for propagation.

Plants from these thirty-six stocks have fruited in the field four or five seasons. Of these, two stocks, Rubel and Harding, have proved much superior to any of the others. Occasional berries have been found on each of these fully three-quarters of an inch in diameter.

RUBEL

*Plants 12 to 18 inches high, twenty-five dollars
(\$25.00) each*

Rubel blueberries are about the same size as the Harding, illustrated on page 2, with a heavy bloom and beautiful blue color. They are sub-acid, with a charac-

teristic delicious blueberry flavor, and have very small unobtrusive seeds. The texture is pleasantly firm, of exceptionally good shipping quality.

Rubel plants are strong and vigorous in growth, with fine foliage of a bluish green in summer and a rich red in autumn. The buds of the beautiful flowers are as pink as apple buds, changing to pure white as they expand.

The original bush, found during the summer of 1912, had twenty-five stems five to six feet high. The largest plants in the field are now about four feet high and will grow much larger. They have borne an enormous crop for their size each of the five years they have fruited.

HARDING

*Plants 12 to 18 inches high, twenty-five dollars
(\$25.00) each*

(See illustration on page 2)

The Harding is a handsome dark blue berry with a thin bloom. In flavor it is sweet and delightful; especially enjoyed by those who do not care for the more acid blueberries until they have been cooked. The seeds are small and unobtrusive and the skins very tender. This berry will probably not ship successfully to great distances, but for home use and nearby markets it is fine.

The Harding plant is as vigorous and fruits as heavily as the Rubel, but possibly is less beautiful. The flower buds are greenish white and the expanded flowers pure white.

The original Harding bush, which was located in 1912, was three and one-half feet high. This may or may not be its maximum. None of the field plants reached this size, as they were cut up for propagating purposes as soon as their great desirability was learned.

CROSS POLLINATION

Blueberry plants are sterile to their own pollen or to the pollen of another plant which has been produced from a cutting of the same stock; therefore the fruit of a cultivated plant will not set unless wild bushes are growing near or plants from entirely different stocks are planted in close proximity.

To meet this need we offer :

Two plants, one each of Rubel and Harding . \$45.00

Five plants, assorted Rubel and Harding . . 100.00

PARTIALLY TESTED PLANTS

9 to 24 inches high, \$1.25 each

Nearly sixty wild bushes were selected during the summer of 1914, the plants propagated from which bore their first few berries in the field the summer of 1917, and, owing to unfavorable weather conditions, produced but little more during the summer of 1918. From these small fruitings we satisfied ourselves that a number of the stocks were below our standard and discarded the plants, but several years will be required before the comparative value of the better plants can be fully determined.

It is quite possible that these plants include a number of stocks as good as Rubel and Harding, or even better, and it is to be expected that under favorable conditions the largest berries produced by any of these plants will reach nearly five-eighths of an inch (16 mm.) in diameter. It was required that the largest berry of each sample sent in by the finders of the wild bushes be at least this large for the bush to be accepted; some were much larger.

Under favorable conditions plants transplanted this spring should produce some fruit the summer of 1920.

All orders for six or more partially tested plants will be filled from three or more different stocks.

NAMES OF PLANTS

The selected wild bushes moved to the plantation at Whitesbog have usually been named after the finder or some local geographic feature. In some cases a number of desirable plants found by the same man have been named Brown 1, Brown 2, Brown 3, etc.

After some years' trial it will probably be found that a few of these stocks are so superior to the others that they only will be used for further propagation. If one of these superior stocks happens to have an unattractive name it will be given a new one which will be announced. Those purchasing partially tested plants will do well to keep their plants carefully marked so that if they should happen to get one of the stocks which time proves to be the best, *they may be able to identify their prize.*

TERMS AND SHIPMENT

Cash should accompany all orders. We prefer it in the form of a Post Office Money Order. The responsibility of Joseph J. White, Inc., can be ascertained by consulting Dun's or Bradstreet's commercial reports. Orders accompanied by cash will be filled strictly in the order in which they are received, due allowance being made for those coming from distant points. If available plants remain after filling orders accompanied by cash, those orders asking for credit may be filled.

Quotations are for plants carefully packed and delivered F. O. B. shipping point.

Shipment will be made as early in the spring as the weather permits, probably from March 15th to April 10th, and will be by express in all cases unless the purchaser especially directs otherwise.

RESPONSIBILITY

We will be responsible for any damage suffered by plants in transit because of imperfect packing, provided complaint is forwarded the same day that plants arrive at destination. None but vigorous, well-rooted plants will be shipped, but we cannot be responsible if they do not thrive after being received by the purchaser.

CARE OF PLANTS BEFORE PLANTING

When plants shipped to more northerly points arrive before the ground is sufficiently thawed to plant them, they may be kept in the original package for several weeks, if necessary, in a cold place where they will not dry out. Freezing will not harm them, but in all cases great care should be taken that the roots do not become dry, and as soon as possible they should be planted in a soil composed of peat and sand.

Before planting, at least two-thirds of the top of the blueberry plants should be cut away. When this is done they will recover more rapidly from the shock of moving, and are more likely to produce berries the summer of 1920.

CULTURAL DIRECTIONS

Blueberries require an acid, peaty soil. The character of the plants already growing on a piece of land affords the best indication of its suitability for this fruit; so if wild blueberry bushes or allied plants are present it may safely be assumed that the soil is adapted to growing blueberries.

In a garden which is not naturally suited to blueberries a congenial soil may be provided for a few bushes by digging a trench eighteen inches deep and at least three feet wide and filling it with partly decayed leaves and sand in about equal parts; or the addition of considerable quantities of dead leaves may be sufficient if the soil is not too heavy.

In selecting a location for blueberries, care should be taken to assure an ample supply of moisture and at the same time an open, well-ventilated soil. Because blueberries are found growing in swamps the mistake should not be made of supposing that they will flourish in soil the interstices of which are filled with water. Where they grow in swamps they are always found on a hummock of decaying vegetation or moss, usually on top of an old stump, where during the growing season the roots are above the water level and obtain an ample supply of air.

When a swamp where vigorous blueberry bushes abound is leveled without being drained and young blueberry plants are set in it, they either die or merely exist.

The necessity of free drainage in connection with ample moisture cannot be too strongly emphasized in connection with cultivating blueberries; both are as necessary as the proper kind of soil.

A few plants in a garden may best be cared for by maintaining about them a heavy mulch of oak or other leaves that do not decay quickly.

In our field culture on soil that is naturally adapted to blueberries we practise clean cultivation.

Valuable information on the requirements of blueberry plants may be obtained from "Experiments in Blueberry Culture" and other bulletins written by Mr. Frederick V. Coville, of the U. S. Department of Agriculture.

What Berry is Worth More Commercially in the United States than All the Other Berries Combined?

(Question referred to Elizabeth C. White at the meeting of the New Jersey State Horticultural Society at Atlantic City, N. J., December 2, 3, 4, 1918.)

When this question was referred to me by our secretary with the expression of a hope that it would bring forth some up-to-date blueberry information, it seemed to me a joke, and that I certainly could not at the present time claim the blueberry to be worth more commercially in the United States than all the other berries combined. I knew the wild crop to be enormously valuable, and I believed that with the introduction of cultivation and improved varieties it might in a few years easily become the most valuable, but yesterday I was told by our friend Horace Roberts that statistics had been presented at the last meeting of the Pomological Society showing it to be now worth much more commercially than all the other berries combined.

If you wish to know more about these statistics you will have to ask Mr. Roberts. I can only tell of the prospects of the cultivated fruit.

The tremendous quantity of wild blueberries now sold, often in exceedingly messy, unattractive condition, proves what a general favorite is this fruit. When greatly improved blueberries are offered in carefully prepared packages, it would seem that the market should be almost unlimited.

Our blueberry plantation is now yielding a small interest on the investment, and it seems justifiable to reveal the foundation of our air castle as to the commercial value of the cultivated berry.

To date we have about fifteen acres planted, eight of which may be expected to produce more or less fruit next summer. Of this, the oldest piece of any uniformity is a lot of about 1075 seedlings which were planted in the field in September of 1913, when they were one year old from seed. Spaced four feet apart in rows eight feet apart, they would occupy about four-fifths of an acre.

In 1916, the third summer in the field, we picked from this lot of plants 370 quarts, which were sold at 25 cents a quart. In 1917 we picked 826 quarts, which also sold for 25 cents a quart. In 1918, the fifth summer in the field, we picked 585 quarts, which sold for 30 cents a quart. Now, in using this as a foundation for air castles, it should be remembered that these plants are seedlings from selected wild parents, and while the average quality is much above that of an equal number of wild plants, it varies enormously.

Nearly 10 per cent. of the plants were removed after the first fruiting in 1916 because the berries were so much below the average in size; some plants are unproductive, many others are only moderately productive.

Of the 1075 plants, one, which we call 620 A, is much better than the others. This bush is no larger than the average, but in 1917 it produced $2\frac{1}{2}$ quarts of berries, compared to an average production per bush of less than $\frac{3}{4}$ of a quart. In 1918 it produced $1\frac{1}{4}$ quarts, compared to an average per bush of about 1 pint. This was only about half a crop, for the blueberries this year suffered from the severe early frost of September 11, 1917, which checked the formation of fruit buds, and also from unfavorable weather conditions at blooming time. The summer of 1917 the plant 620 A was picked four times, and the berries of the third picking, $1\frac{1}{2}$ pints, were counted and all measured. More than 92

per cent. by count were $\frac{1}{2}$ inch and more in diameter. The largest berries of the first picking measured 18 mm., or about $\frac{1\frac{1}{6}}$ of an inch in diameter. If all the bushes had been like this one, we would have picked at the rate of 3400 quarts per acre instead of at the rate of 1030 quarts per acre, the quality of the fruit would have been twice or thrice as good, and undoubtedly would have commanded a much higher price.

These bushes are very young yet. They will grow several times their present size, and probably yield for years. There are wild bushes with some marked characteristic which are known to have been picked for thirty or forty years.

The largest berries of 620 A are 18 mm. in diameter, and the bush is from a seed produced by Mr. Frederick V. Coville by hand pollination in the greenhouses of the Department of Agriculture at Washington, from two parents, the largest berries on one of which reach their greatest diameter at 16 mm. (about $\frac{5}{8}$ of an inch), while those of the other rarely surpass 14 mm.

These were the finest berries we knew at the time this cross was made. Since then several wild bushes have been found with berries larger than 620 A, one with berries surpassing 19 mm., or fully $\frac{3}{4}$ of an inch in diameter.

Crosses of these have been made, but as yet have not yielded fruit. If among these seedlings we should get a plant producing fruit as much larger than its parents as does 620 A, we should have blueberries an inch in diameter.

We also have great improvement in flavor and texture over the average wild berries, with prospect of even finer quality.

You see that on these foundations an air castle can be built reaching above the clouds.

The pinnacle of the air castle may never be reached by the reality, but we feel sure of a goodly structure. To further its building and the achievement of the time when blueberries will be worth twice as much commercially in the United States as all other berries combined, we are working hard at the problems of blueberry propagation, and believe that within two years we will be able to offer some of the better varieties of blueberry plants in considerable quantities.



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